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# Grade : 10 CYCLE TEST 2 Date : .08.22

# Marks: 20 MATHEMATICS Time : 40min

1. For what value of k, the roots of the equation x2+4x+k =0 are real.

2. If one root of the equation ax2+bx+c=0 is three times the other , the b2 : ac =

a) 3:1 b) 3:16 c) 16:3 d) 16:1

3. If the roots of the equation (a2+b2)x2 – 2b(a+c) +(b2+c2) =0 are equal . then

a) 2b=a+c b) b2 = ac c) $b=\frac{2ac}{a+c}$ d) b=ac

4. Sum of the areas of two squares is 468m2. If the difference of their perimeter is 24m, formulate the quadratic equation to find the sides of the two squares.

 In a class test, the sum of Ranjitha’s marks in Mathematics and English is 40. Had she got 3marks more in Mathematics and 4 marks less in English, the product of the marks would have been 360. On the other hand, Ranjitha’s friend , Malti scored 3 marks less in Mathematics and 2 marks more in English than what Ranjitha scored. Based on this information , answer the following questions.

5. How much did Ranjitha score in Mathematics?

a) 12 b) 21 c) 26 d) both a and b

6. How much did Ranjitha score in English?

a) 28 b) 19 c) 20 d) both a and b

7. How much did Malti score in Mathematics ?

a) 9 or 18 b) 15 or 24 c) 23 or 29 d) none of the above

8. Over all adding the marks of both the subjects, who scored more ?

a) Ranjitha b) Malti

9. Find a natural number whose square diminished by 84 is equal to thrice of 8 more than the given number.

(or)

If Zeba were younger by 5 years than what she really is, then the square of her age ( in years ) would have been 11 more than 5 times her actual age. What is her age now?

10. The hypotenuse of a right triangle is 3$\sqrt{5}$ cm. If the smaller side is tripled and the larger side is doubled, the new hypotenuse will be 15 cm. Find the length of each side.

(or)

The perimeter of a right triangle is 60 cm. Its hypotenuse is 25cm. Find the area of the triangle.

11. Solve for x : $\frac{1}{x-3}-\frac{1}{x+5}=\frac{1}{6}$

12. Seven years ago varun’s age was five times the squares of swati’s age. Three years hence swati’s age will be two fifth of varun’s age. Find their present ages.

13. In the centre of a rectangular law of dimensions 50m x 40m , a rectangular pond has to be constructed so that the area of the grass surrounding the pond would be 1184m2. Find the length and breadth of the pond.

14. The denominator of a fraction is one more than twice the numerator. If the sum of the fraction and its reciprocal is $2\frac{16}{21}$, find the fraction.

**ALL THE BEST**